City of Santa Barbara
California

PLANNING COMMISSION

STAFF REPORT

REPORT DATE: July 12, 2012

AGENDA DATE: July 19, 2012

PROJECT: Draft Climate Action Plan

TO: Planning Commission

FROM: Planning Division, (805) 564-5470
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I. PUBLIC HEARING AND COMMENT PERIOD ON CLIMATE ACTION PLAN

Today's Planning Commission hearing is to receive comment from the public and Commission on the draft City of Santa Barbara Climate Action Plan.

The City invites public review and comment on the draft Plan through August 6, 2012. Written comments may be forwarded to Barbara Shelton at bshelton@santabarbaraca.gov or to the Planning Division office, P. O. Box 1990 (630 Garden Street), Santa Barbara, CA 93102.

II. BACKGROUND

A. Climate Change Issues

The consensus of scientists and science institutes worldwide is that accelerated global climate change is occurring as a result of increasing amounts of heat-trapping greenhouse gases in the atmosphere that are emitted from human activities such as combustion of fossil fuels for electricity generation and vehicle fuel. By reducing the amount of carbon emissions generated in the Santa Barbara community together with communities across the world, the extent of future climate change and severity of its impacts may be lessened.

Even with efforts to reduce carbon emissions, carbon dioxide remains in the atmosphere for decades, and with existing high levels, destabilized climate processes are forecasted in coming decades. Likely future effects include more extreme weather events (e.g., heat waves, large storms, flooding, droughts, fires); coastal erosion and flooding from sea level rise; changes to water supply; increased air and water pollution; changes in disease and pest transmission; geographic shifts of wildlife and plant species; and effects on local economies such as fisheries.

Weather processes are complex and there are uncertainties in predicting the exact rates, patterns, and extent of climate changes affecting specific locations. In addition to taking actions to reduce carbon emissions, monitoring and planning is needed for adaptation to the effects of climate change.

B. Policy Guidance for Climate Plan Preparation

The 2005 U.S. Mayors Climate Protection Agreement, endorsed by the City of Santa Barbara and 1054 other cities, directed cities to endeavor to reduce carbon emissions to meet the Kyoto protocol (7% below 1990 levels by 2012). Since that time, city of Santa Barbara government facilities and operations have met that target through concerted efforts in energy, transportation, waste management and water conservation.

California legislation AB 32 (2006 Global Warming Solutions Act) identifies a target for reducing overall statewide greenhouse gas emissions to 1990 levels by the year 2020. The Act also directed development of a Scoping Plan, issued 2008 by the California Air Resources Board (CARB), which identifies emission-reducing measures that can be taken by the State and different economic sectors. Local governments are recommended to prepare climate action plans toward meeting the State emissions reduction target, and dozens of cities and counties have done so, with many more in progress.

SB 375 (2008 Sustainable Communities and Climate Protection Act) directs each Metropolitan Planning Organization (MPO) in the State to develop strategies to reduce carbon emissions from vehicles, through coordinated regional planning for transportation, land use, and housing to reduce vehicle trips and miles travelled. This effort is underway for the Santa Barbara County MPO by the SBCAG (Santa Barbara County Association of Governments). The CARB established year 2020 and 2035 targets for the Santa Barbara County region that per capita greenhouse gas emissions from passenger vehicles would not exceed year 2005 per capita levels.

The *Plan Santa Barbara* General Plan update (adopted by City Council in December 2011), directed preparation of a comprehensive climate action plan in accordance with State legislation (Action ER11). The General Plan update itself included a variety of updated sustainability policies that also address climate change in the areas of energy, travel and land use, vegetation, waste management, water conservation, hazard avoidance, and emergency preparation. These policies and programs have received recent public review and decision-maker acceptance, and have been incorporated as the basis of the draft Climate Action Plan.

III. SUMMARY OF CLIMATE ACTION PLAN

The Santa Barbara Climate Action Plan addresses climate change issues for the City of Santa Barbara community for the period to the year 2030. The plan purposes are to reduce the rate of carbon emissions generation within the community consistent with State legislative directives, and to begin planning for adaptation to climate changes.

A. Community Carbon Emissions Inventory and Forecasts

The Climate Plan estimates citywide greenhouse gas emissions generation due to vehicles and equipment, natural gas and electricity usage, and the City's share of emissions from landfill decomposition and State Water Project electricity consumption.

A baseline citywide carbon emissions inventory (2007) and an update characterizing current conditions (2010) are provided based on information from the General Plan traffic model, land use data base, and utility company data. Estimates of past levels in 1990 and 2005 are provided because they are used for the State 2020 and 2030 targets.

Forecasts of future citywide carbon emissions are estimated for total emissions (2020) and vehicle emissions (per capita 2020 and 2030), along with comparison with the targets.

The following summary chart shows that Santa Barbara communitywide emissions have already been reduced to below the 2020 and 2030 target levels. With implementation of existing carbon-reducing measures in place and identified Plan strategies, it is forecasted that the targets for overall emissions and vehicle emissions will continue to be met through 2030.

Figure ES-1 – Summary of Santa Barbara Carbon Emissions Forecasts	
Forecast Scenario	**Annual Emissions** (Metric tons CO_2e)
Citywide Total Emissions – Year 2020 (AB 32 Target)	
2007 citywide emissions inventory (baseline)	719,833
2020 target for total emissions (1990 level)	724,388
2020 emissions forecast –"business as usual" (with General Plan growth)	861,326
Emissions reductions needed to meet 2020 target	-136,938
Emissions reductions from State legislative measures	-179,580
2020 emissions forecast with State reductions	681,746
Emissions reductions from City climate plan	-138,561
2020 emissions forecast with State and City climate plan reductions	543,185
Citywide Per Capita Vehicle Emissions – Year 2020 (SB 375 Target)	
2020 population forecast	92,064
2020 target for per capita on-road vehicle emissions (2005 level)	4.413/person
2020 vehicle emissions forecast – business as usual	5.965/person
Vehicle emissions reduction needed to meet 2020 target	-1.552/person
Vehicle emissions reductions from State legislative measures	-1.693/person
2020 vehicle emissions forecast – with State reductions	4.272/person
Vehicle emissions reduction from City climate plan	-1.176/person
2020 vehicle emissions forecast – with State and City reductions	3.096/person
Per Capita Vehicle Emissions – Year 2030 (SB 375 Target[1])	
2030 population forecast	95,110
2030 target for per capita on-road vehicle emissions (2005 level)	4.413/person
2030 vehicle emissions forecast - business as usual	6.525/person
Vehicle emissions reduction needed to meet 2030 target	-2,112/person
Vehicle emissions reductions from State legislative measures	-2.559/person
2030 vehicle emissions forecast with State reductions	3.966/person
Vehicle emissions reductions from City climate plan measures	-2.123/person
2030 vehicle emissions forecast with State & City climate plan reductions	1.843/person

[1] *The City climate plan has a planning horizon to 2030. The 2030 vehicle emissions target is a proxy for meeting the regional 2035 vehicle emissions target*

B. Carbon Reduction Strategies

The Plan identifies programs already in place that reduce carbon emissions in City government and the community at large, and additional strategies to further reduce emissions in years ahead.

Many of the strategies have already been adopted as future implementation actions in the *Plan Santa Barbara* General Plan update adopted by City Council in December 2011. Most strategies involve guidelines, incentives, and outreach, while a few involve requirements (e.g., energy conservation ordinance and solar panel design requirements for new development).

***Energy Efficiency and Green Building*:** More efficient equipment and energy conservation practices in existing and new structures reduce carbon emissions from electricity generation.

Extensive efforts over the past decade have upgraded City government facilities and operations for energy efficiency, and many similar private actions have occurred within the Santa Barbara community. City actions addressing the larger community have included more stringent energy conservation requirements for new structures, and City participation in programs such as Architecture 2020, South Coast Energy Efficiency Partnership, SB County emPower, Built Green Santa Barbara, and the Green Business Program of Santa Barbara County.

Plan strategies are to continue energy-efficiency upgrades for City government facilities and practices, and continued voluntary and incentive measures for more energy efficiency and green building in existing and new buildings throughout the City. Strategy 4 identifies stronger outreach, incentive, and requirements that could be instituted if periodic community assessments determine that voluntary measures are not resulting in sufficient progress.

***Renewable Energy*:** Renewable power sources that are not depleted (e.g., solar, wind, hydroelectric, bio-gas) reduce carbon emissions resulting from combustion of fossil fuels for electrical generation and vehicle fuels. California law requires that by the year 2020, at least one-third of the State's energy is to come from renewable sources. Due to population growth, even with energy conservation, electricity demand is expected to continue rising during this period.

Hundreds of solar voltaic panel installations have been installed by individual residents, businesses, and institutions in Santa Barbara. City actions have included solar installations at City facilities and Housing Authority projects; solar design guidelines and recognition program; and alternative energy facilities at the El Estero wastewater treatment plant.

Plan strategies include additional City solar and hydroelectric projects; stronger solar requirements for new construction; and support for renewable energy technologies and infrastructure.

***Travel and Land Use*:** Reducing the number of petroleum-powered vehicle trips overall and per capita vehicle miles travelled lessens carbon emissions from combustion of petroleum fuels.

City government operations have reduced carbon emissions through fleet vehicles using alternative fuels and technologies, efficient fleet vehicle operations, and reduction of City

employee commute trips. City downtown mixed-use policies, improvements to bicycle and pedestrian facilities and bus services have all supported the growth of alternative travel modes.

Plan strategies include continued gradual improvements for bicycle, pedestrian, and transit facilities and services; continued support for transportation demand management measures (such as telecommuting, alternative work hours, ride sharing, car sharing, parking policies); continued support for alternative vehicle and fuel use and infrastructure; and continued land use and transportation policies that encourage walkable and bikable neighborhoods, and workforce housing close to transit and commercial services.

Vegetation: Trees, particularly established older trees, assist in climate change by removing carbon emissions from the atmosphere, as well as providing cooling shade.

The City has an extensive urban forest of trees and vegetation within both public places and on private property. City programs in place include park and street tree maintenance and replacement; creeks restoration; and tree preservation and landscape guidelines.

Plan strategies are for continued and updated tree management and protection programs and guidelines, and open space protection and restoration.

Waste Management: Diverting materials from landfill disposal through waste reduction, reuse, recycling, and composting reduces energy use and emissions associated with product manufacturing and transport. In addition, methane generated from landfills is a very potent greenhouse gas that can be captured to reduce emissions.

Citywide programs for waste diversion have resulted in substantial reduction of landfill disposal. These include residential, business, and construction waste recycling and outreach programs; food scraps composting; and City government recycling and waste reduction practices.

Plan strategies include partnering on regional waste-to-energy and material recovery facilities; expanded City government waste management practices; and expanded community reuse, recycling, and composting programs toward a goal of 75% waste diversion by 2020.

Water Conservation: Water conservation is associated with electricity savings from water transport and processing, and resulting carbon emissions reductions.

The Santa Barbara community has reduced overall water use by more than 2,000 acre-feet per year since the drought in the early 1990s. City programs in place include policies and guidelines for water conservation, landscaping, and recycled water; and public education, outreach, and incentive programs for water-wise landscaping and irrigation practices and equipment.

Plan strategies including continuing and expanded water conservation programs toward a goal of reducing per capita water use by 20% by 2020.

C. Climate Change Effects and Adaptation

Climate processes are complex, not completely understood, and not easily forecasted into the future. Modeling efforts to date have been done primarily on global and regional levels. The timing, pace, and extent of climate change effects in Santa Barbara are uncertain, but more detailed research is expected to become available in coming years.

The 2009 California Adaptation Strategy report anticipates the following types of widespread climate change effects on California in the coming decades:

- Increased frequency and severity of heat waves, droughts, and wildfires;
- Larger storms and associated flooding and erosion;
- Increased air and water pollution, and changes in pest and vector transmission;
- Sea level rise effects on storm damage, inundation, beach loss, and coastal cliff erosion;
- Changes to water supply, agriculture/food supply, and energy demand;
- Effects on wildlife and habitats; and
- Changes to local economies such as tourism and fisheries.

Strategies to plan for adapting to climate change effects would expand on programs already in place for emergency preparedness; wildfire, flood control, and water conservation planning; coastal hazard and resource management; planning for public services; biological resource protection; and coordination with local economic sectors.

Identified programs include further community resilience planning for emergencies; and monitoring of sea level rise and analysis of effects on coastal floodplains, beach and sea cliff erosion and public and private facilities, to inform adaptation planning.

IV. ANALYSIS OF CLIMATE PLAN STRATEGIES

Exhibit A of this report provides a summary chart listing Climate Plan strategies along with information about implementation target dates, effectiveness in reducing carbon emissions, other benefits of the measures, and cost considerations.

A. Plan Implementation and Monitoring

Identified carbon emissions reduction and adaptation planning activities will be undertaken by a variety of City departments. Some will also be joint ventures with other local and regional agencies and organizations. Target dates of 2015, 2020, 2025, or 2030 have been identified for each of the climate plan strategies. Some programs are already established but will be expanded, and some new programs once established will continue through the planning period to 2030. The Plan would be updated in 2030.

Climate plan measures applicable to new development will be implemented through the City development design and permitting processes. As occurs now, these may include project design measures that would reduce carbon emissions (e.g., energy, water, waste reduction, landscaping,

and travel design) and measures to avoid or address reasonably foreseeable climate-related hazards (e.g., sea cliff retreat, floodplains).

Climate plan monitoring and reporting will be coordinated to be part of the General Plan Adaptive Management Program (AMP) slated for forthcoming development, and would include:

- *Plan Implementation Reports:* Reports on the implementation status of climate plan strategies would be provided as part of regular AMP reports.

- *Periodic Emissions Inventory and Climate Change Updates:* As part of the AMP status reports in 2015, 2020, 2025, and 2030, additional monitoring information would be provided, including (1) an update to the citywide carbon emissions inventory and comparison to targets, and (2) updated information on climate change and future forecasts (e.g., pertaining to temperature, rainfall, storms and flooding, sea level rise, coastal erosion, biological resources, etc.)

B. Cost Considerations

Plan implementation measures will be taken up whenever possible as part of existing, ongoing City operations and programs. They will go forward as budgets allow and are authorized through the annual budget process. Budget constraints do not allow for Plan strategies to all be implemented immediately. Grant funding will be pursued to offset costs, as for example has occurred recently with substantial grant funding obtained for energy efficiency improvements at City facilities, and for climate plan preparation.

There is no doubt that many of the identified public and private actions to reduce carbon emissions and plan for adaptation involve substantial upfront costs, which can be a serious constraint to proceeding. However, over the longer-term, costs associated with retrofitting equipment, facilities, and processes for energy efficiency, water conservation, waste diversion, alternative transportation, etc. generally pay for themselves later with operational cost savings.

For strategies identified for initial implementation actions in the period to 2015, many involve already established activities that would continue on with gradual expansion. An example is ongoing efforts to further energy efficiency, reduce vehicle emissions, and increase waste diversion in City facilities and operations. As another example, the City has implemented many bicycle facility improvements over the years. The bicycle master plan is slated for update and additional incremental facility improvements would occur gradually within the City through 2030. Similarly, the City has been involved in community energy efficiency and green building efforts, and would continue to promote energy efficiency, green building, and renewable energy in both City facilities and through the development review process. Ongoing waste management, water conservation, tree maintenance/replacement, and creek restoration efforts would also continue.

Other strategies (both measures already adopted in the General Plan update and new measures in the climate plan) would require identification of funding sources or budget resources. Transportation facility improvements are an example. A number of the adaptation planning

strategies also fall into this category, including additional planning and analysis processes such as community resilience planning, monitoring of sea level rise-related conditions, analysis of sea level rise vulnerability and adaptation plans, shoreline management planning; and habitat protection. Periodic costs for updating the community carbon emissions inventories and reporting on plan status would also occur.

C. Other Benefits of Carbon Reduction Strategies

In addition to their climate protection benefits, carbon reduction strategies are consistent with City sustainability policies and provide other community benefits, including the following:

- Operational cost savings from measures that conserve energy resources, water resources, and travel fuel, and reduce waste disposal.
- Generation of new businesses and jobs that benefit the community and local economy (e.g., new technologies and services for building retrofits, renewable energy, alternative travel, sustainable gardening, etc.)
- Security enhancement from reducing dependence on foreign oil and conserving our own oil and gas resources
- Conservation of energy, water, and landfill disposal capacity
- Reduced air and water pollution, reduced traffic, and health benefits of more walkable, livable neighborhoods
- Benefits to natural habitats

V. ENVIRONMENTAL REVIEW

The following summarizes environmental review of the draft Climate Action Plan under California Environmental Quality Act (CEQA) provisions.

The Plan is within the scope of review for the General Plan Update and its Program EIR. An Addendum to the Program EIR for the Climate Plan (included as Appendix D - Volume 2 of the Climate Plan) documents changes to the prior EIR analysis.

The State CEQA Guidelines provide that an Addendum to a prior EIR is prepared to document changes that make the prior EIR adequate for the current project when the changes are not associated with new significant impacts. An Addendum need not be circulated for public review but is attached to the EIR and considered by the decision-making body together with the EIR.

A. Background: Program EIR for General Plan Update

The Program Environmental Impact Report (EIR) for the *Plan Santa Barbara* General Plan Update was certified by the Planning Commission September 2010 and by City Council December 2011. The EIR evaluated citywide effects on the environment from growth to the year 2030 under the proposed General Plan policies (growth of up to 1.5 million feet of net additional commercial and other non-residential development and up to 2,800 additional housing units). This included the many General Plan policies incorporated into the draft Climate Action Plan.

The Program EIR analysis provided an initial citywide greenhouse gas emissions inventory and forecasts showing increasing emissions to the year 2030. It concluded that greenhouse gas impacts would be significant and not fully mitigated (Class 1) because increasing carbon emissions would potentially not meet the AB 32 and SB 375 emissions reduction targets.

B. Addendum to Program EIR for Climate Plan

An Addendum to the Program EIR was prepared to document environmental review of the draft Climate Action Plan.

Climate Change Impacts: Preparation of the draft Climate Action Plan included refinement of the citywide greenhouse gas emissions inventories and forecasts estimate initially identified in the Program EIR. Methodologies for doing community emissions inventories and forecasts have been evolving throughout the State over the past several years. The refined emissions inventories and forecasts continue to use the General Plan growth assumptions and Program EIR traffic model. Changes in the inventories and forecasts reflect State legislative actions that would reduce carbon emissions across the State (e.g., vehicle emission standards). In addition, newer standard assumptions for vehicle through-trips and aircraft emissions were used.

The refined citywide carbon emissions inventories and forecasts identify substantially lower emission levels than were identified previously in the Program EIR. Baseline (2007) and current (2010) levels are shown to already have reduced enough to meet the State targets for total emissions (1990 levels) and vehicle emissions (2005 levels). With continued implementation of carbon-reducing measures already in place and proposed climate plan measures, forecasted emissions would continue to meet these targets in the years 2020 and 2030. Climate change impacts of the General Plan and draft Climate Action Plan are therefore determined to be less than significant (Class 2).

Other Environmental Impacts: The majority of the strategies in the draft Climate Plan are policies and programs directly from the General Plan update that were evaluated in the Program EIR. Additional strategies in the draft Climate Plan represent added detail and implementation measures consistent with the General Plan policies, and which would present no new significant impacts beyond the citywide impacts identified in the Program EIR.

VI. PUBLIC COMMENT RECEIVED

Exhibit B to this report provides public comments on the draft Climate Plan received to date.

VII. NEXT STEPS

Following the end of the public review and comment period (August 6, 2012), a proposed final Climate Plan will be prepared and scheduled for City Council consideration for adoption.

Note: Copies of the draft Climate Action Plan were provided previously to Planning Commission members. The draft Plan and Appendices are available on the City web site at the following link: http://www.santabarbaraca.gov/Resident/Major_Planning_Efforts/Climate_Action_Plan, or from the City Planning Division office located at 630 Garden Street.

Exhibits:

A. Draft Climate Action Plan Strategies Listing with Cost and Effectiveness Information

B. Public Comments on Draft Climate Action Plan

EXHIBIT A
DRAFT CLIMATE ACTION PLAN CARBON REDUCTION STRATEGIES LISTING WITH COST AND EFFECTIVENESS INFORMATION

Notes:

Target Dates in the period to 2015, 2020, 2025, or 2030 are identified."Ongoing" indicates measures already undertaken or in place that are gradually expanded incrementally over time.

Effectiveness in reducing carbon emissions is estimated. "BMP" refers to best management practices, which are measures that are expected to contribute to carbon emissions reduction, but the amount is not quantifiable. Similarly, some measures are included as part of the Traffic Model forecast assumptions, and are not separately quantified. Some measures may be effective in reducing emissions but emissions reduction would not accrue to the City emissions inventory (e.g. City efforts to lobby for reduction of marine shipping emissions)

I. CARBON EMISSIONS REDUCTION: CITY GOVERNMENT OPERATIONS

The following measures are applied only to City government facilities and operations. As such, they can provide only a relatively limited contribution toward reduction of communitywide carbon emissions.

Strategies	Target date	Effectiveness Estimated annual $MTCO_2e$ reduction (2020; 2030)	Other benefits	Cost considerations
Energy Efficiency and Green Building				
1-Energy efficiency/City facilities	Ongoing	(318; 581)	Energy resources; national security; air quality	Substantial initial costs; offset by grant funding; reduced operating costs
2- Recreational facilities lighting	2015	(16,16)		
Renewable Energy				
6-Recommission hydroelectric plant	2015	(233; 233)	Energy resources; national security; air quality	Substantial initial costs; offset by grant funding; reduced operating costs
7-Solar voltaic at Airport lot	2015	(167; 167)		
Travel and Land Use				
14-Fleet vehicles	Ongoing	(242; 484)	Traffic; air quality; energy; security; health; livability	Low initial costs; reduced operating costs
15-City employee travel	Ongoing	(200; 345)		
Waste Reduction				
44-City purchasing guidelines	2015	BMP	Reduced landfill expansion costs; energy/security	Moderate initial costs; reduced operating costs
45-City facility recycling	2015	BMP		
46-Electronic processes	2015	BMP		
47-Regional coordination	2020	BMP		
48-Waste-to-energy project	2015	(533; 533)		
Water Conservation				
65-City facilities	Ongoing	(1; 2)	Water supply; energy/security	Moderate additional initial costs; reduced

				operating costs

II. CARBON EMISSIONS REDUCTION: CITYWIDE

Strategies	**Target date**	**Effectiveness** Estimated annual $MTCO_2e$ reduction (2020, 2030)	**Other benefits**	**Cost considerations** City & private sector
Energy Efficiency and Green Building				
3-Energy efficient buildings/ voluntary actions	Ongoing	High (3,992; 9,816)	Energy resources; national security; air quality; local economy	Moderate
4-Efficient buildings/ further action	2025	High (334; 3270)		High
5-Green building	Ongoing	High (BMP)		Low
Renewable Energy				
8- Community choice aggregation	2020-30	High (20,101; 20,101)	Energy resources; national security; air quality; local economy	High
9-Alternative/ advanced fuels	2020-30	High (48,811; 85,560)		Moderate
10-Alternative fuel infrastructure	2015			
11-Small wind generators	2020	Moderate (24; 334)		Moderate
12-Facilitate renewable energy	2020	Moderate (167, 334)		Moderate
13-Solar energy	Ongoing	High (996; 3,287)		Low
Travel and Land Use				
16-Mixed use land use policies	2015	High (part of traffic model)	Traffic; air quality; energy resources; national security; health; livability; local economy	Moderate
17-Sustainable neighborhood plans	2020-30	Moderate (traffic model)		High
18-Experimental development tech	2015	Low (BMP)		Moderate
19-Complementary land uses	2020	Moderate (traffic model)		Moderate
20-Electric vehicle charging stations	2015	High (1,967; 3,018)		Moderate
21-Pedestrian infrastructure	Ongoing	Moderate (327; 584)		High
22-Bicycle infrastructure	Ongoing	High (905; 1,735)		High
23-Personal transportation	Ongoing	High (2,616; 2,919)		Moderate
24-Intermodal connections	Ongoing	High (1,967; 1,886)		High
25-Opimize roadway capacity flow	Ongoing	High (7,867; 15,090)		Low
26-Mid-block traffic improvements	Ongoing	Moderate (BMP)		High
27-Regional transportation/ commuter transit	Ongoing	High (4,284; 7,974)		High
28-Vehicle speeds	2015	Low (BMP)		Moderate
29-Bus pull-out right-of-way	2015	Low (BMP)		Moderate
30-Circulation improvements	Ongoing	Moderate (BMP)		High
31-Transit passes	Ongoing	High (2,927; 5,449)		Moderate
32-Parking policies	Ongoing	High (31,446; 69,973)		Moderate
33-Car-pooling and telecommuting	Ongoing	High (3,570; 4,984)		Moderate
34-Car sharing	Ongoing	High (1,118; 1,990)		Moderate
35-Development impact fees	Ongoing	Low (BMP)		Moderate
36-Street widths	Ongoing	Low (BMP)		High
37-New development emissions	2015	Moderate (BMP)		Low
38-Marine shipping emissions	Ongoing	Low (BMP)		Low
Vegetation				
39-Tree planting	2030	Low (18; 35)	Cleanse air/ water habitat support; watershed/ erosion; open space/ visual ; intrinsic	Moderate
40-Street trees	2015, Ongoing	Moderate (BMP)		High
41-Tree and landscaping protection	2015	Moderate (BMP)		Moderate
42-Urban heat island effect	2020	High (806; 1,612)		Moderate

43-Regional open space preservation	Ongoing	High (BMP)	value; economy	High

CARBON EMISSIONS REDUCTION: CITYWIDE (continued)

Strategies	Target date	Effectiveness Estimated annual $MTCO_2e$ reduction (2020, 2030)	Other benefits	Cost considerations
Waste Reduction				
49-Communitywide waste diversion	2020	High (1,121; 1,158)	Reduced landfill expansion costs; energy resources; national security; local economy	High
50-Regional material recovery facility	2015	High (BMP)		High
51-Waste audit information/business	2015	Low (BMP)		Moderate
52-Recycling education campaigns	2015	Low (BMP)		Moderate
53-Single-use packaging reduction	2015	Low (BMP)		Moderate
54-Business/MF recycling ordinance	2015	Moderate (BMP)		Moderate
55-Construction waste enforcement	2015	Low (BMP)		Moderate
56-Increased recyclables sorting	2015	Moderate (BMP)		Moderate
57-School waste diversion	2015	Moderate (BMP)		Moderate
58-Materials reuse/recycling for builders	2015	Moderate (BMP)		Moderate
59-Building space guidelines/waste	2015	Low (BMP)		Moderate
60-Additional recycling materials	2020	Low (BMP)		Moderate
61-Additional green waste capacity	2020	Low (BMP)		Moderate
62-Recycling/public places	2020	Low (BMP)		Moderate
63- Additional composting	2020	Low (BMP)		High
64-Single-use bag reduction	2015	Low (BMP)		Moderate
Water Conservation				
66-Community water conservation	2015, ongoing	High (1,329; 1,539)	Water supply; energy resources; national security; local economy	Moderate
67-Recycled water	2020-30	Low (BMP)		Moderate
68-On-site water storage and reuse	2020	Low (138; 208)		Moderate

III. CLIMATE CHANGE ADAPTATION

Strategies	Target Date	Cost Considerations
Climate Change Adaptation Planning		
69. Planning for adaptation	2020, 2030	High
70. Coordination of climate planning efforts	ongoing	High
Emergency Preparedness		
71. Emergency response strategies	2015	Moderate
72. Emergency workforce	2015	Moderate
73. Public education for emergencies	2015	Moderate
74. People with disabilities	2015	Moderate
75. Community resilience planning	2020	High
Wildfire, Flooding, Water Quality		
76. Residential development – high fire hazard	2015	Moderate
77. Fire prevention and creek restoration	2015	Moderate

CLIMATE CHANGE ADAPTATION (continued)

Strategies	Target Date	Cost Considerations
Wildfire, Flooding, Water Quality (continued)		
78. Water system improvement for firefighting	ongoing	Moderate
79. Private water supplies for firefighting	ongoing	Low
80. Floodplain mapping update	2020	High
81. Creek resources and water quality	2025, ongoing	High
Coastal Vulnerability and Adaptation Planning		
82.Sea level monitoring, data, analysis	2020	High
83. Sea level risk assessment and vulnerability	2020	High
84. Incorporate adaptation in development	2015, ongoing	Moderate
85. Sea level rise adaptation	2020	Moderate
86. Future inundation	2020	Moderate
87. Bluff retreat guidelines	2015	Moderate
88. Cliff erosion policies	2020	Moderate
89. Shoreline management plan	2020	High
90. Beach erosion policies	2020	Moderate
91. Coastal ecosystems study	2020	Moderate
Public Services		
92. Water supply planning	2015, ongoing	Moderate
93. Regional cooperation - water supply	ongoing	Moderate
94. Local food cultivation	2030	Moderate
95. Community gardens	2030	Moderate
96. Regional agriculture	ongoing	Moderate
Biological Resources		
97. Wildlife and habitat protection	2020, ongoing	High
98. Open space connectivity and trails	2020, ongoing	High
99. Creek protection, restoration	2020, ongoing	High
Local Economies		
100. Coordinate with local business	2015, ongoing	Moderate

EXHIBIT B
PUBLIC COMMENT RECEIVED TO DATE